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CURRENT STATUS AND PROBLEMS OF THE SAWMILLING INDUSTRY IN THAILAND A CASE STUDY IN BANGKOK METROPOLITAN AREA

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CURRENT STATUS AND PROBLEMS OF THE SAWMILLING INDUSTRY IN THAILAND A CASE STUDY IN BANGKOK METROPOLITAN AREA

by

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TABLE OF CONTENTS

LIST OF APPENDICES

LIST OF FIGURES

LIST OF TABLES

ABSTRACT

Sawmilling industry in Thailand lack the technical information and data for improving the sawmilling operation. Futhermore, severe log shortage results to the forced shut-down/closure of several sawmills. In an effort to help solve these problems, this study was conducted to determine the current status and identify the problems faced by these sawmills. Based on the survey and field visits, the major problems included shortage of raw material and flexible government policy. Most of the sawmills were very primitive and ill-equipped coupled with limited skilled labour resulting to high production cost, low productivity rate and low recovery rate. There is also additional research and development that need to be carried out and advisory services to be provided to the sawmilling industry. The government must review its policies towards promoting modern equipment and technology by giving supports through financing and training programs. Both government and private sectors must joint together in helping and upgrading the plights of the sawmills.

CHAPTER 1

INTRODUCTION

1.1 General Statement

In 1961 Thailand embarked on economic and social development planning. During the past 29 years, the government had formulated no less than six consecutive plans on national economic and social development to emphasize efforts toward the mobilization and allocation of economic resource for improved quality of life. The Sixth National Economic and Social Development Plan is the latest (1987-1991) which aims to improve the efficient use of natural resources and lead the country to gain the status of a Newly Industrialised Country (NIC) in the very near future (Narong, 1988).

Wood-based indutry is one important industry considered in the Sixth Plan. The plan aims to improve the efficient use of natural forest resources for the greatest benefit. Four big segments of the wood-based industries in Thailand which are able to utilize a great variety of timber species are (Table 1):

i. Sawmilling industry.

ii. Veneer and plywood industry.

iii. Particle board and fibre board industry.

iv. Pulp and paper industry.

They are considered to be important to the Thai economy especially the sawmill sector. In terms of value added, wood-based industries account for about 7% of the total manufacturing value added, but they account for over 10% of manufacturing employment (Turbang, 1989).

Table 1. Four segments of the wood based industries in Thailand (1987).

Item	Total	Bangkok Metropolitan Area	Other Regions
Sawmills	480	82	398
Veneer and Plywood	33	15	18
Particle & Fibre board	7	1	6
Pulp & Paper industries	34	no data	no data

Source: Yearly report, RFD. Thailand. 1988

According to the Protection Division of the Royal Forest Department, sawmilling industry in Thailand can be divided into three types:

i. Teak sawmill, this sawmill uses only teak wood (Tectona grandis) as raw material in the process.

ii. Non-teak sawmill will use all species of wood except teak as raw material.

iii. Integrated timber complexes, they will

operate on both teak and non-teak wood as raw material for the production of furniture, parquet, door and window etc.

Sawmilling industry in Thailand started 100 years ago with steam engine operated mills. Some of these sawmills are still in operation with steam engine as the main power source. But the practice and the running of them are all alike. The same old machinery and equipment are always in use and renovation or innovation both in the form of material and method could hardly be seen except in a few big sawmills belonging to the state enterprise. This may be due to the fear of capital loss on account of most sawmills working at intervals for lack of timber. The sawmill sectors not only have old machinery and equipment but also the number of mills are declining slowly. This is because the industry's total capacity is considerably larger than the amount of logs for input in the mills. Most of sawmills distributed over the area of the country and the large mills have their highest concentration in Bangkok Metropolitan Area particulary the integrated timber complexes.

In the past Thailand was reputed to be among the world's leading producers and exporter of tropical logs and sawntimber especially valuable timber like Teak (Tectona grandis). But in 1977, the Thai government decided to ban the export of all species of logs and sawntimber except Pinus spp. In 1989, the Thai government banned logging in

the country because of rapidly decreasing natural forest resource that is well below the govenrment target which is forty percent of the total land area (Table 2).

Table 2. Forest area in Thailand between 1961-1985.

Year	Total area (sq.km.)	Forest area (sq.km.)	%
1961	513,115	273,628	53.33
1973	513,115	221,707	43.21
1976	513,115	198,417	38.67
1978	513,115	175,224	34.15
1982	513,115	156,600	30.52
1985	513,115	149,053	29.05

Source: Royal Forest Department. 1987

Thailand which once used to export valuable logs and timbers, has since become an importing country. Most of the imported logs and sawntimber come from neighbouring countries such as Malaysia, Indonesia, Laos and Myanmar. There is a big demand for such imports from the wood-based industries and construction sector. There is big competition for logs and changes in the forest policies of neighbouring countries will affect Thai's domestic wood-based industries especially in the sawmill sector. Recently Thailand has had to seek other sources of supply, from Papua New Guinea and Fiji.

The picture is not, however, entirely gloomy. Rubber wood from plantations in the south of the country is increasingly being used in the wood products industry of the southern Thailand and even in Bangkok. The popular valuable, slow growing species such as Pradu (Pterocarpus spp.), Payung (Dalbergia spp.) and Chingchan (Dalbergia spp.) are becoming rare. However the Teak (Tectona grandis) is improving, because Thailand has been very successful in establishing Teak plantations in the northern part the country. So far, small sized Teak logs from plantation have already been used as raw material in Thai s sawmilling industry.

1.2 Statement of Problem

Wardle (1984) stated that in many countries and particularly developing countries census information on the sawmilling industry is not available. Thus special surveys may be necessary to fill the gaps left by the census, as well as to provide specific detail required by the sector on the industry not provided by economic censuses. This is because information on the sawmilling industry as on any other branch of the forestry and forest products sector may be relevant at a number of different levels :

i. To understand the functioning of the economy at the national level as a basis for policy formulation on investment, exports or conservation of resources.

ii. As a basis for business decisions on investment and marketing.

iii. To rationalise the planning of training programmes and extension services.

iv. To provide information for advisory and extension services.

Surveys set up specifically by the forestry authorities or by the sawmilling industry or sawmilling associations are likely to be designed to provide information explicitly aligned to the sector interests.

For Thailand, the sawmilling industry was booming in the past, production and profits were high and the question of research requirements, technical advice or assistance hardly arose. Until recently the collection of statistics on the sawmilling sector in Thailand has been limited to the collection of data on production and trade in forest products. For this reason, detailed information on the sawmilling industry such as background data which is necessary to policy formulation and decision making by government or enterprises is still lacking.

The timber source for the sawmilling industry has been mainly the natural forests, but in recent years the shortage in local log supply has become more severe. Several sawmills have been forced to shut down while the others are trying to carry on with the reduced capacity.

In view of the above it is necessary and urgent to

assess the current status of the sawmilling indutry. Information such as general background, source of raw material, availability of expertise or skilled labour and infrastructure which are important not only to the sawmilling industrialists but also to any foreign investors. These information will be the basis to identify problems affecting the sawmilling industry and to suggest appropriate ways to overcome them.

1.3 Objectives

1.3.1 General Objective

The general objective of this study is to gather information on characteristics of the sawmilling industry in Bangkok Metropolitan Area.

1.3.2 Specific Objectives

i. To determine the current status of the sawmilling industry in the Bangkok Metropolitan Area.

ii. To identify the problems faced of the sawmilling sector.

iii. To suggest possible solutions to overcome the problems.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

Sawmilling is the process of converting the potential worth of the standing tree into the highest market value of lumber. It is a long sequence of interlinked, interrelated, carefully taken decisions by many people. The sawmill industry, everywhere, has several unusual characteristics (Wray, 1988):

i. Every sawmill has its own unique features.

ii.Sawmills, especially the smaller, are closer to the forests than to the infrastructure of technical developement such as training institutions and machinery manufactures.

iii. The diversity of the industry is wide.

iv. Sawmills are large and small, employ low and high technology, manufacture a variety of products, from logs of all species and characteristics.

v. It requires little capital to start a small operation, and a lot to gain all the benefits of modern technology.

vi. Sawmills are complex, difficult and decision intensive.

The principle types of sawmills in most developing countries as assessed by FAO (1981) are as follow :

i. Portable sawmills or mobile mills which usually consist of a circular saw headrig, a simple log carriage, a two-saw edger and a diesel or gasoline mechanical power unit. This machinery is usually mounted on a prefabricated steel framework equipped with road wheels so that it may be towed into the working area where it is blocked and levelled. Log supply volume of about 5,000 cubic meters per annum is the most economical approach for this type of sawmill.

ii. Semi-permanent sawmills comprise conventional units of headsaw, carriage, edger and trimsaws mounted on steel and timber support structures on timber foundations. Its capacity is a log supply volume of about 10,000 cubic meters per annum. This type of mill permits more flexibility in the range of end products, improves dimensional accuracy in sizing and increases lumber recovery from the logs.

iii. Permanent sawmills comprise of conventional units of headsaw, carriage, resaw, edger and trimsaw with rollcases, transfer tables and refuse conveyors, all mounted on steel and timber supports on concrete or treated timber foundations.

2.2 Sawmilling Industry in Thailand

Pongparit (1990) mentioned that the first Thai sawmills were run by steam engine, with the earliest ones being in 1890 in the Bangkok Metropolitan Area. At that

time, there were about 20 sawmills establised by four companies namely :

i. The Bombay Burma Borneo Company

ii. The Anglo Thai Company

iii. The East Asiatic Company

iv. Louis T. Lewnowans Company.

All logs that were process were teak that came from the northern part of Thailand. Some of those sawmills are still working till this day with steam engine as their main power source.

After the Second World War in 1946, the number of sawmills increased steadily to 60 and all of them were privately owned.

In 1947, the Forest Industry Organization (FIO) a semi-government organization set-up sawmills in Bangkok.

By 1960, there had been up to 689 sawmills. But this led to extensive over harvesting of the forest resulting in a serious lack of raw materials to feed the sawmills.

Since then, the number of sawmills had decreased to about 498 in 1976. One year after that, the government had banned totally the export of logs or lumber to conserve the forests resource.

Later, the government tried to cut down the number of excessive sawmills in order to preserve the national forest resources. The total capacity of the whole sawmills in the country was over the optimum harvesting yield from the

existing forest. Many sawmills that were located close to the forests, cooperated with the local people, and had illegally cut the trees to feed their sawmills, but this was gradually repressed in recent years. The government will not allow any establishment of new sawmills nor allow any increase in the present production capacity.

In order to conserve the national forest resources, the Thai Government closed down half of the logging throughout the country and thus decreased the timber production since 1979. To fulfill the local timber consumption it had to import 0.4 million cubic meters compared to 0.9 million cubic meters produced locally (RFD, 1989).

In recent years the number of sawmills decline slowly from 493 in 1982 to 471 in 1989. This is because the industry's total capacity is considerably larger than the production of logs from the forests. Most of the sawmills in Thailand are primary processing industries but some of these mills have undertaken secondary processing to produce parquet, mosaic and furniture. A few operate as integrated timber complexes. These sawmills are located all over with 82 of them in Bangkok Metropolitan Area.

Lew (1983) mentioned in a Regional Study for the Commercialisation of the Timber Resources in the Asean Countries that the total number of Thai sawmills is about 498 (among of them nine mills belonging to government

agencies). All of them have a capacity of over 5,000 cubic meters per year. The area with the most of sawmills is Bangkok. The percentage of capacity utilization of sawmills is not available but it is certainly low (between 25 and 50 %).

When compared with the sawmilling industry in Asean country such as : Indonesia, the total number of sawmills in Indonesia is about 2,157 which can be distributed as 421, 1,220 and 516 mills producing less than 500, from 500 to 5,000 and more than 5,000 cubic meters per year respectively. The total annual rated capacity per shift is estimated at around 10 million cubic meters. The capacity utilization is about 52.5 % (Lew, 1983).

In Malaysia, the total number of sawmills is about 904 mills producing 500-5,000 cubic meters per year for 221 in Peninsular and 40 in Sarawak. The other 643 sawmills produce more than 5,000 cubic meters per year and are distributed, in Peninsular (432), Sabah (146) and Sarawak (65). The annual production in 1979 was 76 % of the total rated capacity (Lew, 1983).

In the Philippines, 37 sawmills produce 500 to 5,000 cubic meters per year and 343,more than 5,000 cubic meters per year. A few sawmills produce more than 50,000 cubic meters per year. The percentage of capacity utilization is low between 24-37 % during 1977 to 1981 (Lew, 1983).

Mungkorndin and Eadkeo (1978) stated that the average

size of the Thai sawmills is small. The range of power is 55.89 - 163.12 HP with an average of 74.02 HP Eighty-seven of the sawmills have less than 100 HP. Most of them use old equipment and can not obtain enough raw material to operate to full capacity.

According to the Forest Industry Organization of Thailand, Thai sawmills can be divided into three group as follows:

i. Large sawmills - consuming about 80 cubic meters of round logs per day.

ii. Medium sawmills - consuming about 40 cubic meters.

iii. Small sawmills - consuming less than 40 cubic meters.

Small and some medium sawmills are in the provinces where production or output is confined chiefly for the local consumption while large sawmills and a number of medium sawmills are located in Bangkok, the business centre both for timber use and export.

2.3 Raw Material

Since January 14, 1989 when the Thai Government banned logging this has been acute shortage of raw materials for sawmills and other wood-based industry (Narong, 1989). According to the Thai Ministry of Commerce about 30 sawmills import logs which mainly from Malaysia, Indonesia, Myanmar and Laos. About 10 to 15 of them are major sawmills

involved in large-scale sawmilling operations. In spite of imported logs, however, Thailand still imports sawn timber to fulfill for local demand. In 1986, Thailand import timbers about 0.20 million cubic meters of timber and in 1988, about 0.62 million cubic meters. The total imported log and timbers from 1983 to 1988 are given in Table 3.

Table 3. The total imported logs & sawn timber.

Year	Logs	Sawn timber
1983	231,784	398,591
1984	199,458	382,032
1985	172,100	382,000
1986	152,744	199,937
1987	286,115	450,431
1988	438,932	620,344

Source : Yearly report of RFD. 1989

Before logging was banned, the log supply to Thai sawmill arise from :

i. Private loggers including provincial logging companies about 36 %.

ii. Government logging companies or from Forest Industry Organization (FIO) about 56 %.

iii. Imports 8%.

After logging was banned, almost the total log supply was imported from Burma and Malaysia etc.(Pongparit, 1990)

The main log species in the sawmilling industry in